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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
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10/500,286

06/29/2004

Yusuke Wakabayashi

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05/19/2006

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EXAMINER

HANNON, THOMAS R

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/500,286             | WAKABAYASHI ET AL.  |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Thomas R. Hannon       | 3682                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Claims 9-11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito (Japan 06-081030).

Saito discloses a shaft (Fig. 1) having a hardened section (2) formed on an outer surface of the shaft in a projecting manner, and an indentation (4) formed between portions of the hardened section. The indentation traps lubricant (abstract). The method of hardening the hardened section is disclosed as being by means of a laser beam, similar to that disclosed by Applicant, corresponding to the claimed quench hardening. Based on the similarity of hardening, the functional limitation of a hardness Hv of 550 or more may be an inherent characteristic of Saito. In accordance with *In re Best*, 562 F.2d 1252, 195 USPQ 430, 433 (CCPA 1977): Where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in face, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on. This “burden of rebutting [may be of] the PTO’s reasonable assertion of inherency under 35 USC 102, or of prima facie obviousness under 35 USC 103” (195 USPQ at 432). Accordingly, the burden is placed on the applicant to prove that the hardness limitation in question is not an inherent characteristic of the hardening process of Saito. The shaft of Saito is capable of being supported by a porous bush. With respect to claim 10, Saito shows the hardened section as being helical. With respect to claims 11, 13, and 14, Saito notes in the abstract that the hardened part is “formed into spiral, latticed or reticular shape”, a lattice and reticular shape inherently possesses a line parallel to the axis of the shaft.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (Japan 06-081030) as applied to claim 9 above, and further in view of Ono. Ono discloses a shaft member provided with recessed portions for the pooling of lubricant. The recessed portions of Ono include recesses in the shape of a spiral groove, or alternatively, as a plurality of circles. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hardened portions of Saito to include other known types of lubricant recesses, including that of a plurality of circles, because this is taught and suggested by Ono as being a known alternative.

Claims 1-3, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (Japan 06-081030) in view of Akita et al (U.S Patent No. 5,490,730).

Akita discloses a bearing assembly comprising a porous bush (9) impregnated with lubricant, a shaft (10) supported by the bush, and sealing members (12) provided on both sides of the bush in an axial direction thereof. Saito discloses a shaft member, supra. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Saito in known bearing devices desiring lubrication, including that of a porous bearing as shown by Akita. With respect to claim 8, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Saito in known devices, including that of a joint arm.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Akita et al. as applied to claim 1 above, and further in view of Ono.

Ono discloses a shaft member provided with recessed portions for the pooling of lubricant. The recessed portions of Ono include recesses in the shape of a spiral groove, or alternatively, as a plurality of circles. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hardened portions of Saito to include other known types of lubricant recesses, including that of a plurality of circles, because this is taught and suggested by Ono as being a known alternative.

Claims 17 and 18 are allowed.

Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's arguments filed April 19, 2006 have been fully considered but they are not persuasive. With respect to claim 9, Applicant notes that Saito fails to mention the surface hardness of the shaft. This argument has been addressed in the rejection above, noting that Saito anticipates this hardness as inherent. With respect to claim 11 Applicant asserts that there is no quench hardened section in the form of a line parallel to an axial direction of the shaft. As noted above the reticular shaft and latticed shape described by Saito anticipates this limitation. With respect to the rejections based on 35 USC 103, Applicant asserts there is no motivation for combining the references as suggested. Applicant states "although a plurality of circles and a helix may be appropriate equivalents in the environment of Ono--wherein oil forcibly is flowed--there is no expectation that such will be the same in the very different environment of Saito

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wherein lubricant is stagnantly collected”. However there is no mention in the abstract of Saito of the pools being stagnant. There is no indication that the environment of Saito is different from that of Ono, and the equivalency rejection is proper. With respect to Akita, Applicant advances no argument with respect to the combination rejection, but relies on the argument previously presented with respect to Saito to distinguish the claims over the rejection. With respect to claim 7 Applicant states “Akita fail to teach or suggest any relationship between the position of the quench hardened section and any sealing members”. However, the combination of Saito and Akita clearly encompasses the claimed subject matter with respect to the quench hardened section, as the shaft member of Akita extends across the porous bush and the seal members.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

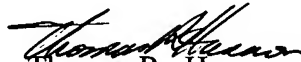
As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Hannon whose telephone number is (571) 272-7104. The examiner can normally be reached on Monday-Thursday (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Thomas R. Hannon  
Primary Examiner  
Art Unit 3682

trh